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FINAL REPORT

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NWX FINAL REPORT

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A. CONCEPT 1: THE EXISTING MUNI SYSTEM

Concept 1 was used by the study team as a basis for comparing and measuring the performance of the other Concepts for transit improvements in the Geary Corridor. Stated another way, it is the "no project alternative" which is a requirement of the recent environmental impact legislation.

General

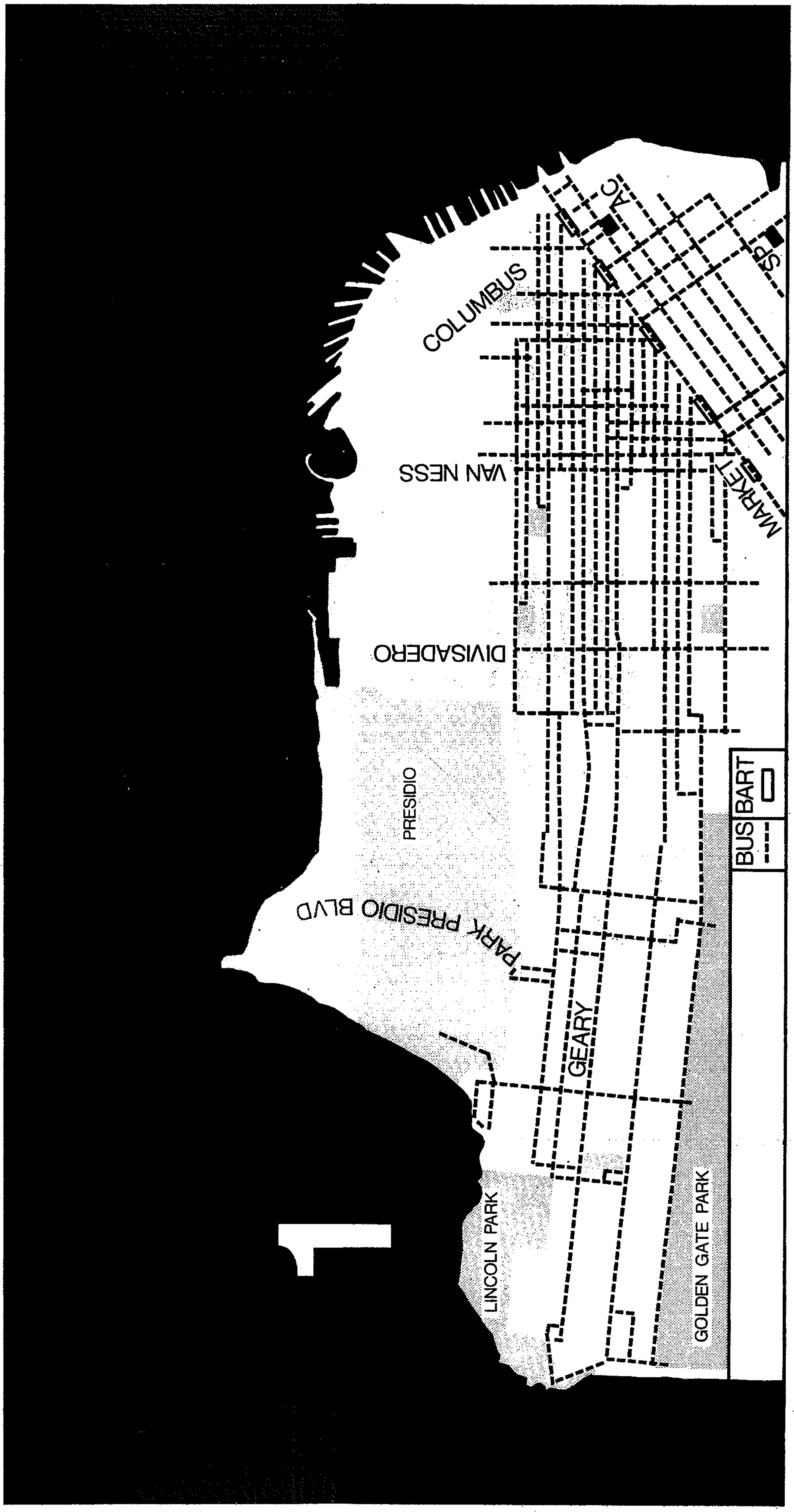
Concept 1 utilizes Diesel and Trolley Coaches. It would have an annual operating cost of $20.0 million and an annualized capital cost of $1.7 million. It is expected to carry between 70 and 80 thousand daily passengers across Van Ness in 1990.

Service

Concept 1 generally provides slow service, particularly to the outer Richmond, except some areas served by express service. From the outer corridor to the Downtown takes between 40 and 50 minutes. Service is often irregular; there are limited and slow crosstown service and poor connections to regional terminals. This system is highly vulnerable to disruption due to traffic congestion.

Impacts

As patronage increases over the next twenty years, the number of buses necessary to carry riders will increase, resulting in increases in air pollution, noise, and traffic congestion and hazards. Since automobile commuters are not expected to be attracted to transit in Concept 1, it will also lead to increased automobile-related impacts. The general consequences of more buses and autos operating in the corridor will be environmental degradation and long-term negative impacts on residential areas.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B. CONCEPT 2: AN IMPROVED BUS SYSTEM

Concept 2 employs a technique recently introduced in San Francisco--Transit Preferential Streets. This means that transit would receive preferential treatment on selected streets. Concept 2 includes the transit preferential streets recently adopted in the Downtown and extends them out to the western end of California, Geary and Turk/Balboa. In addition, Divisadero, Fillmore and Polk would receive transit preferential treatment. On these streets, the flow of buses would be improved by a combination of measures including: limiting on-street parking, restricting automobile turns, controlling traffic signals so that they favor buses, and limiting commercial vehicle access.

General

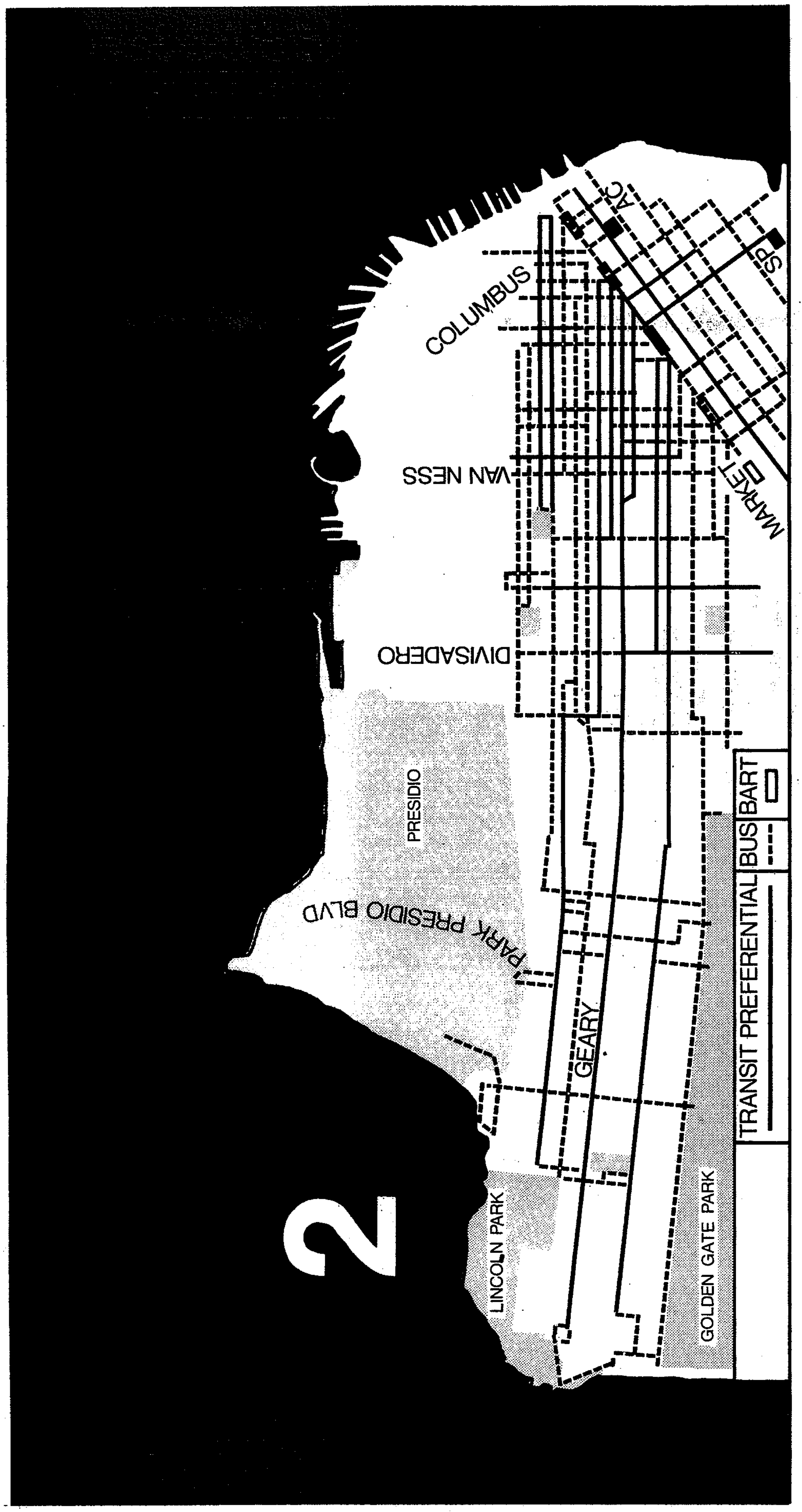
Concept 2 utilizes the new Transbus and improved Trolley Coaches. It would have an annual operating cost of $21.1 million and an annualized capital and construction cost of $2.3 million. It is expected to carry between 80 and 90 thousand daily passengers across Van Ness in 1990. Development time is estimated at 1 to 3 years, though a longer period of time would be required before all the buses in the corridor would be replaced with the new Transbus.

Service

Concept 2 generally would provide improved service with reduced trip times for both local trips and trips from the outer corridor. From the outer corridor to the Downtown would take less than 30 minutes, although the trip times may be somewhat irregular due to conflicts with other surface traffic. These conflicts would be reduced and minimized through the use of transit preferential streets. Local service would be improved through cross-corridor transit preferential streets (Divisadero and Fillmore) and a new line on Laguna Street. The Western Addition would see improved service because of new buses originating there.

Impacts

Concept 2 may cause minor construction disruption while transit preferential streets undergo new curb construction or landscaping. The transit preferential streets would be able to accommodate more buses, removing some lines from residential neighborhoods altogether, providing improvements to those neighborhoods in terms of environment and stability. Transit preferential streets themselves may make pedestrian crossing more fearsome, and noise and air pollution would increase on these streets. On balance, neighborhood environment and neighborhood stability would be moderately improved.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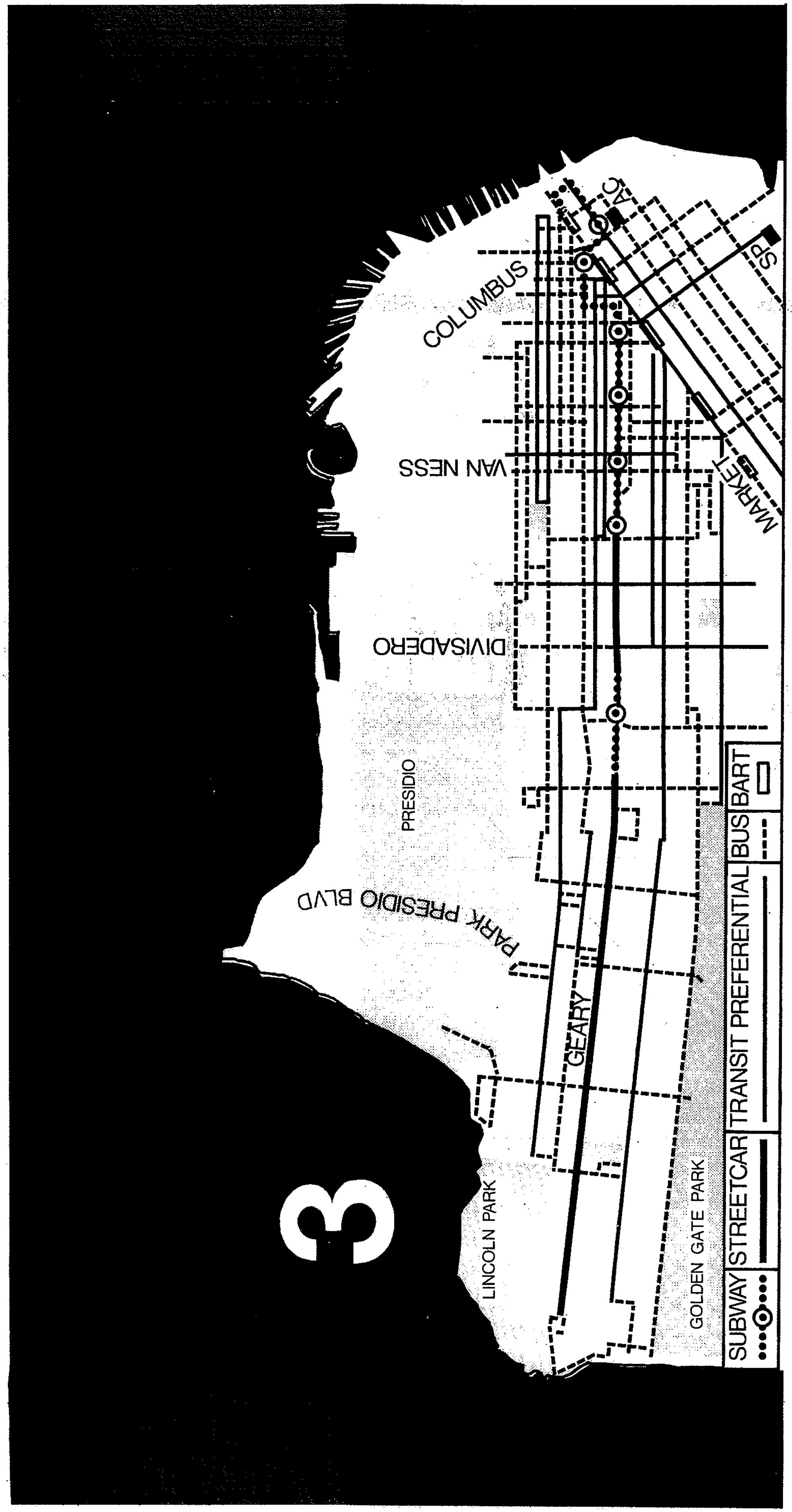
C. CONCEPT 3: MUNI-METRO SURFACECAR/SUBWAY IN GEARY

In addition to the transit preferential streets described in Concept 2, Concept 3 would include the Muni-Metro operating as a limited stop Surfacecar on portions of Geary. The Muni-Metro would operate as a subway for a short stretch in Geary near Masonic and would become a full subway from Cathedral Hill through the Downtown. It would connect with the Muni Market Street Subway and would have a station at the Trans Bay Bus Terminal.

GENERAL: Concept 3 utilizes the new Trans Bus and improved Trolley Coaches, principally for local service and for feeder service to the Muni-Metro vehicles in the Geary line. It would have an annual operating cost of $22.1 million and an annualized capital and construction cost of $5.9 million. It is expected to carry between 90 and 100 thousand daily passengers across Van Ness in 1990. Development time is estimated at 5 to 8 years.

SERVICE: Concept 3 generally would provide improved service and reduced trip time for both local trips and trips from the outer corridor. The trip time between the outer corridor and the Downtown would take less than 25 minutes and would be fairly dependable because of reduced susceptibility to disruptions from traffic congestion. Local service would be improved through cross-corridor transit preferential streets (Divisadero and Fillmore) and through new bus lines on Laguna Street and a new line connecting Children's Hospital with the U.C. Medical Center. As in Concept 2, new bus service would originate in the Western Addition providing improved local service. Improved city-wide and regional service would result from the direct subway interconnections with the Muni/BART lines in Market Street and the station at the Trans Bay Terminal.

IMPACTS: Concept 3 would produce more short-term disruption than all other concepts, except Concept 4, because of the construction of the exclusive right-of-way and subway in Geary. In order to minimize disruption,all subway portions, except at subway stations, would be constructed by the tunnel method. The construction of the subway stations would require traffic to be rerouted off Geary for 2 to 4 months. After 2 to 4 months, traffic would generally resume normal operation on decking over the subway excavation. Air pollution and noise would generally be reduced in the corridor, particularly in the Western Addition and Downtown areas. A restriction on traffic crossing Geary may lead to more traffic on those cross streets and reduced traffic on the residential streets in adjacent neighborhoods. Concept 3 may induce a limited amount of new development, but this would be confined to properties adjacent to Geary in the immediate vicinity of the subway stations. In no case is new development expected to be in conflict with the city's Zoning and Height-and-Bulk ordinances.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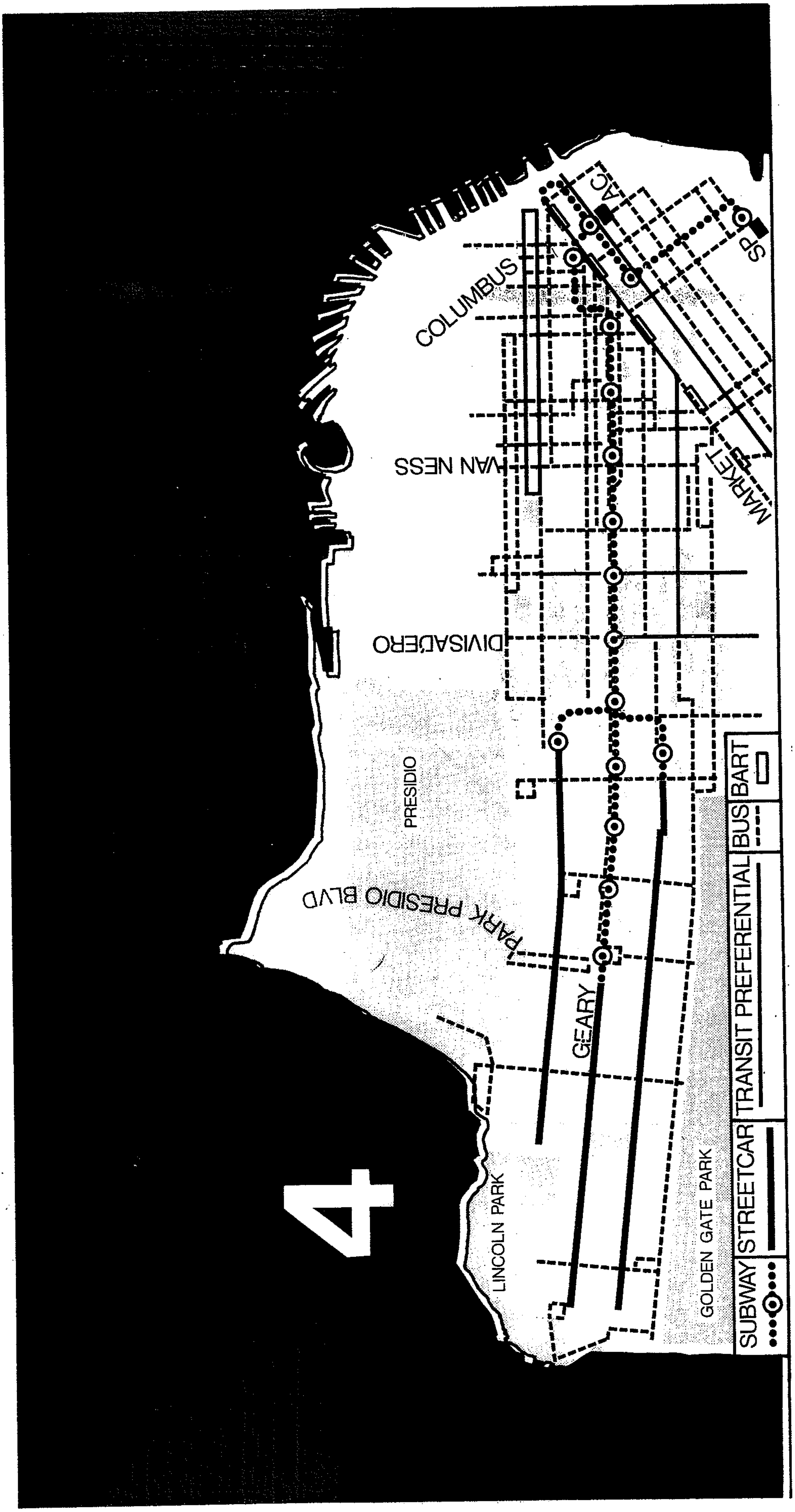
D. CONCEPT 4: GEARY SUBWAY WITH RICHMOND SURFACECARS

Three street-level lines would begin in the Outer Richmond at the western ends of California, Geary and Balboa. The Geary Muni-Metro Surfacecar would go underground and become a subway at 17th Avenue. The Muni-Metro Surfacecars on California and Balboa would operate in transit preferential status and would go underground becoming subways just west of Masonic. They would then merge with the Geary subway line at Masonic forming a single subway line which would continue through the Downtown with connections to the Trans Bay Bus Terminal, and would have a direct link-up with the Muni Subway in Market Street. The subway line would also connect to the Yerba Buena Center and Southern Pacific Terminal. This Concept would accommodate a transfer terminal at Geary and Park Presidio where Golden Gate Transit commuters would transfer to the Geary subway to continue their trips to the Downtown and other corridor destinations. In addition to the city's transit preferential streets adopted for the Downtown, Divisadero, Fillmore, McAllister, and Sacramento-Clay would be given transit preferential status. New cross-corridor bus lines would be added at Laguna, between Children's Hospital and the U.C. Medical Center, and between Fulton and Fort Miley.

GENERAL: Concept 4 includes the new Trans Bus, improved Trolley Coaches and the new Muni-Metro Surface/Subway vehicle. It would have an annual operating cost of $26.8 million and an annualized capital and construction cost of $10.7 million. It is expected to carry between 110 and 120 thousand daily passengers across Van Ness in 1990. If the transfer of Golden Gate Transit commuters is made, then this would be 140 to 150 thousand daily. Development time is estimated at 5 to 10 years.

SERVICE: The most distinctive service feature of Concept 4 is that "single-seat", or no-transfer, service would be provided between the Richmond and Downtown or central inner corridor area. The trip time between the outer corridor and the Downtown would range between 20 and 25 minutes and would be fairly dependable. Local service would be improved through the transit preferential street treatment and through new bus lines. New bus service would originate in the Western Addition which would provide improved local, city-wide and regional service. Improved city-wide and regional service to the entire corridor would result from the direct subway connections to the regional transit systems.

IMPACTS: Concept 4 would have the most short-term disruption due to construction because it has the most subway stations and requires surface improvements to California, Geary and Balboa. The disruption at subway station construction sites would have a duration of 2 to 4 months. This concept, along with Concept 5, provides the maximum reduction in noise and air pollution impacts particularly in the Western Addition and Downtown areas. Concept 4 is expected to induce a limited amount of new development chiefly from Masonic east, but would include areas along Geary at Arguello and Seventh-Eighth Avenues. However, the degree and nature of this development is moderate and expected to fall within the limits of the city's ordinances which control new development.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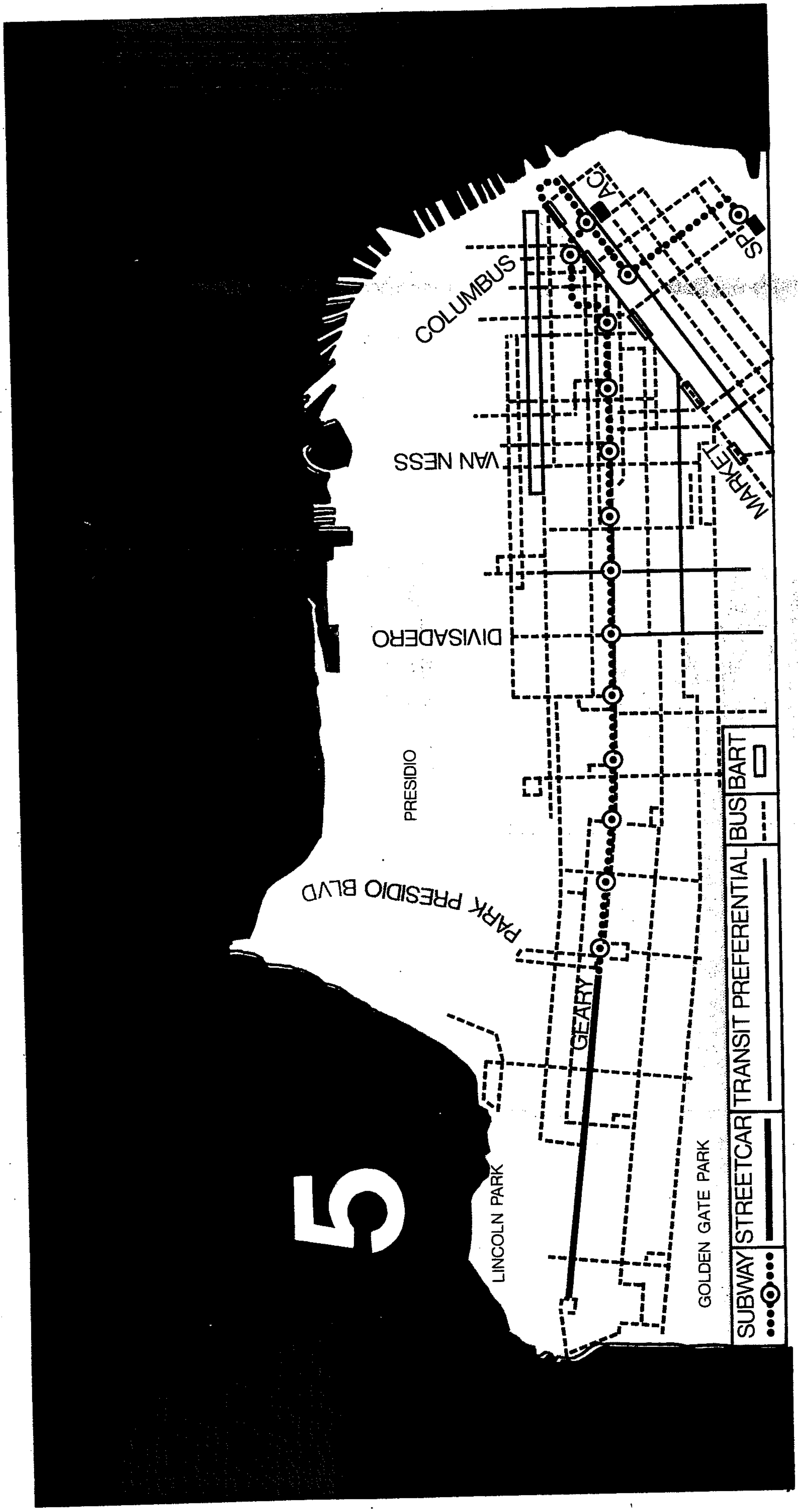
E. CONCEPT 5: GEARY SURFACECAR AND SUBWAY FROM 17TH AVENUE TO DOWNTOWN

The Muni-Metro would operate as a Surfacecar from 47th Avenue to 17th Avenue where it would go underground and become a subway. The subway would continue through the Downtown, south of Market, and would connect to the Trans Bay Bus Terminal, Yerba Buena Center and the Southern Pacific Terminal at 4th and Townsend. In the future, the line could be continued south into the Potrero and Bay View districts and terminate at Candlestick Park. Concept 5 accommodates a transfer terminal at Geary and Park Presidio where Golden Gate Transit commuters would transfer to the Geary subway to continue their trips between Marin County and the San Francisco Downtown and other parts of the corridor. This Concept includes transit preferential streets--Divisadero, Fillmore, McAllister and Sacrament-Clay--and has new cross-corridor buslines--Laguna, the "Med Center" line and at Fort Miley.

GENERAL: Concept 5 includes the new Transbus, improved Trolley Coach and the new Muni-Metro Surface/Subway vehicle. It would have an annual operating cost of $27.4 million and an annualized capital and construction cost of $9.2 million. It is expected to carry between 110 and 120 thousand daily passengers across Van Ness in 1990. If the transfer from Golden Gate Transit is made, this would be 140 to 150 thousand daily passengers. Development time is estimated at 5 to 10 years.

SERVICE: The trip time between the outer corridor and the Downtown would take approximately 21 minutes and would be very dependable. Local service would be improved through the addition of cross-corridor transit preferential street treatment and through the three new cross-corridor bus lines. Improved service to the Western Addition and other inner residential areas would result from new buses originating at mid-corridor and from the transit preferential treatment of McAllister and Sacramento-Clay. Improved city-wide and regional service to the entire corridor would result from the direct subway connections to the Muni/BART lines in Market Street, the connection to the Trans Bay and Southern Pacific terminals and the Golden Gate Transit terminal.

IMPACTS: Concept 5 would have short-term disruptions at the 15 subway station construction sites. However, the disruption would be limited to a duration of 2 to 4 months. After this period, there would be a period of minor disruption--26 to 28 months--during which the subway construction would be completed. Concept 5 would lead to a reduced use of the automobile for trips in the corridor and would lead to a maximum reduction in environmental impacts resulting in maximum improvements in the residential environments. Concept 5 is expected to generate a limited amount of new development along Geary in the vicinity of some subway stations. New development is most likely east of Masonic, although areas along Geary at Arguello and between Seventh and Eighth Avenues would be attractive to new development. However, new development is expected in all cases to fall within the limits of the existing Zoning and Height-and-Bulk ordinances.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4. CONSULTANT TEAM RECOMMENDATION

The consultant team recommendation is based on several factors. First, it is based on two months of intensive and detail analysis and evaluation of the five Concepts utilizing the 66 criteria defined by the study team in Interim Report 3: Criteria. Second, it is based on the degree of compliance each Concept provides with the goals and objectives for the study as defined in Interim Report 1: Policy Framework. Thirdly, it is based on the citizen and public agency review of the five Concepts and the consultant team's analysis and evaluation.

A. GENERAL RECOMMENDATION

The evaluation of the existing transit service in the corridor, as represented by Concept 1, reveals the need for immediate improvements. The San Francisco Board of Supervisors has recognized this and has already acted by implementing a Transit Preferential Street Program on selected streets in the Downtown.

The NWX study team recommends the transit preferential street program be extended out the corridor as represented by Concept 2. Further, the study team recommends that Concept 2 be implemented as soon as possible. However, in view of the evaluation of Concept 2 and its inability to serve the ultimate transit needs of the corridor, the study team views Concept 2 as only an interim solution and recommends a Muni light-rail system as represented in Concept 5 as the ultimate solution.

B. DISCUSSION

There are several reasons why Concept 2 represents only an interim solution. First, the summary evaluation, as well as the detailed evaluation, indicates that Concept 2 does little to achieve the primary objectives identified through the Policy Framework. Second, Concept 2 would produce significant negative environmental impacts in the neighborhoods of the Western Addition and the Downtown residential areas. Third, Concept 2 would make no significant contribution toward reduced use of the automobile in the corridor. Fourth, Concept 2 will not solve the "hide and ride" problems associated with residents from outside the corridor using the corridor transit system. However, in view of the length of time required for more substantial transportation improvements represented by Concept 5, the utilization of Concept 2 as an interim program provides relief during the definition and construction of more substantial improvements for the corridor.

In addition, the consultant team finds Concept 2 as having long-term benefits when integrated into long-term transit improvements for the corridor. These include the maintenance of transit preferential status of many of the streets identified as such in Concept 2 and the utilization of new buses for feeder service and additional cross-town service.

The summary and detailed evaluations identify Concepts 4 and 5 as more fully accomplishing the purposes of transportation improvements in the corridor. The ultimate form of the transit program for the corridor involves a series of steps which include a resolution of certain issues which will ultimately determine the exact configuration of the Muni Light-Rail transit system to be implemented.

The following is an outline of these steps and constitutes the consultants' recommendation.

FIRST, AGGRESSIVELY PURSUE THE IMPLEMENTATION OF CONCEPT 2 WITH A DETAILED DEFINITION OF THE IMPLEMENTATION PROGRAM TO BE CARRIED OUT IN THE FORTHCOMING CITY-WIDE MUNI IMPROVEMENT STUDY.

SECOND, ADOPT CONCEPT 5 AS THE SOLUTION TO THE TRANSIT ISSUES AND NEEDS OF THE CORRIDOR AND AS A PART OF A REGIONAL TRANSPORTATION PLAN, AND AGGRESSIVELY PURSUE ITS DETAILED DEFINITION BY RESOLVING THE FOLLOWING ISSUES:

1. A resolution of the Golden Gate Transit issue. From the point of view of the NWX Study Team, the transfer Concept offers the best overall solution to the Golden Gate Transit problem in San Francisco. Therefore, the consultant team recommends a serious consideration of the transfer of patrons to the NWX subway as represented in Concept 5 as the ultimate solution to the Golden Gate Transit system. Such a solution would have the following advantages:
    a) Remove Golden Gate buses from the congested CBD area in the city;
    b) Minimize in-city impacts of the high volume of Golden Gate bus traffic;
    c) Minimize the "hide and ride" problem in the Richmond through an attractive all-transit capability from Marin County;
    d) Produce the best cost-effective solution on a regional basis.

2. Determine the advisability of the subway spur to the Southern Pacific Terminal. The advisability of this spur is contingent on the resolution of the SP Modernization Study and the future plans for a BART extension into the Peninsula.

3. Subsequent to the resolution of the Southern Pacific Terminal, carefully examine the South of Market alignment. It is suggested, based on this study, that the operational uncertainties and added cost of an operational connection to the Muni Market line may not be warranted. An alignment continuing on First Street with a station at the Transbay Terminal, followed by a turn into Howard with a station at the Yerba Buena Center, and then turning into Third, would be a less costly and better operational solution.

4. Establish the priority of transit improvements for the Geary Corridor, on the scale of Concept 5, in the Metropolitan Transportation Commission's Regional Transportation Plan. Subsequently, define the financing program necessary to carry it out.

C. CONCLUSION

This recommendation would result in transit improvements that provide the highest compliance to the policies and criteria for the study. Specifically, this recommendation is viewed as providing the maximum benefits to the corridor, city and region.

Corridor Benefits

1) Environmental impacts are reduced to lowest possible level. 2) With the inclusion of the Golden Gate transfer, a solution to the "hide and ride" problem is achieved. 3) The transit system has the comfort, capacity and speed required to attract outer corridor automobile commuters.

City-Wide Benefits

1) Reduction of dependence on the automobile for primary travel will reduce environmental impacts throughout the city. 2) Access of

corridor residents to facilities and opportunities throughout the city will provide increased opportunities for corridor residents. Conversely, access of city residents to corridor facilities will enhance the viability of these facilities. In both cases, the city benefits from increased viability of its facilities, institutions and employment centers. 3) The city as a whole would benefit from a transfer of Golden Gate Transit patrons to the NWX Muni-Metro by reducing the impact of Golden Gate buses on the surface of the city.

Regional Benefits

1) A contribution to the effectiveness of the regional transit systems (Golden Gate, BART, AC Transit, Greyhound) by providing an important interconnection which provides access to the important facilities and institutions in the mid- and east-Geary Corridor. 2) A reduction in automobile travel dependence and its concomitant environmental impacts.

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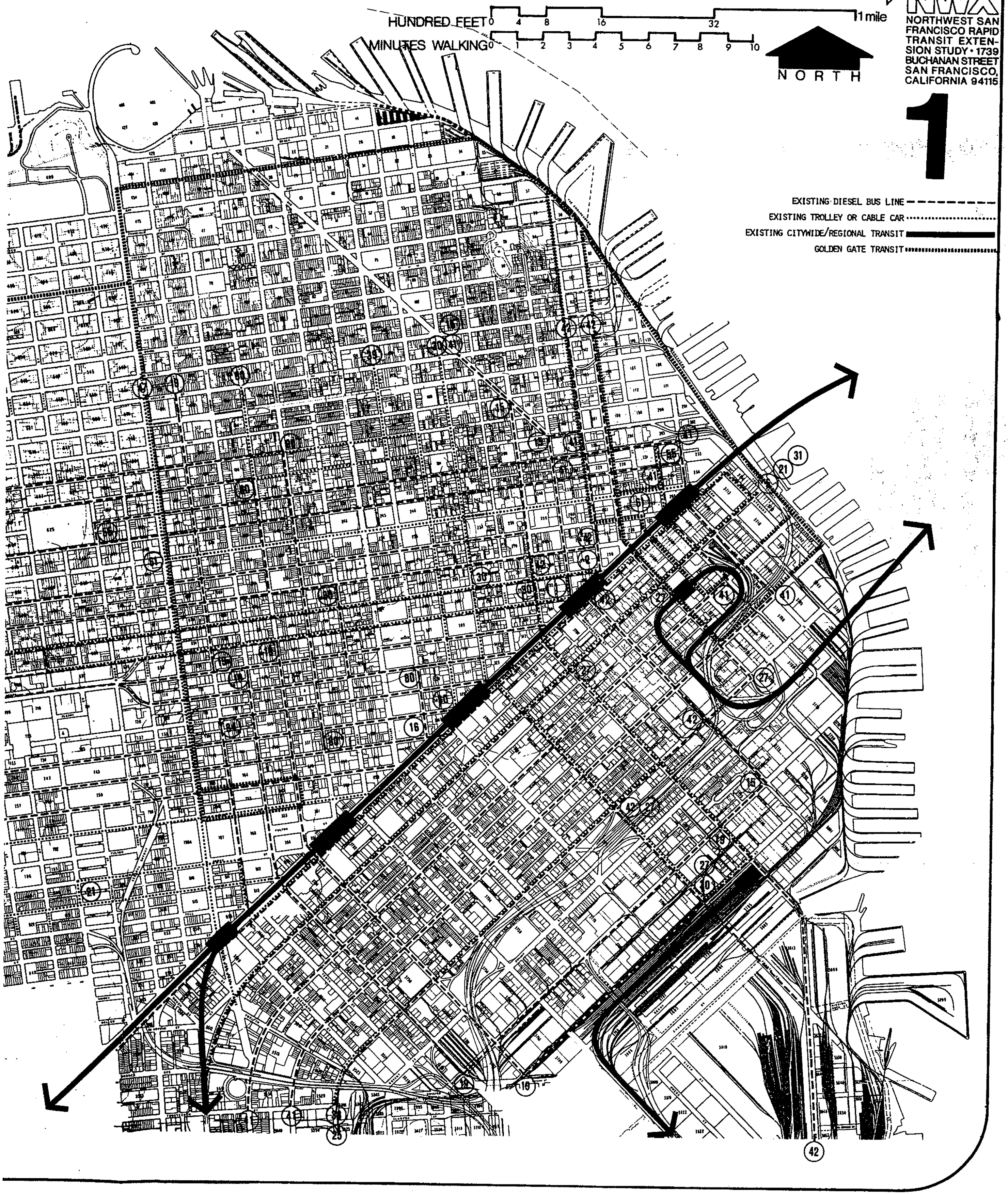
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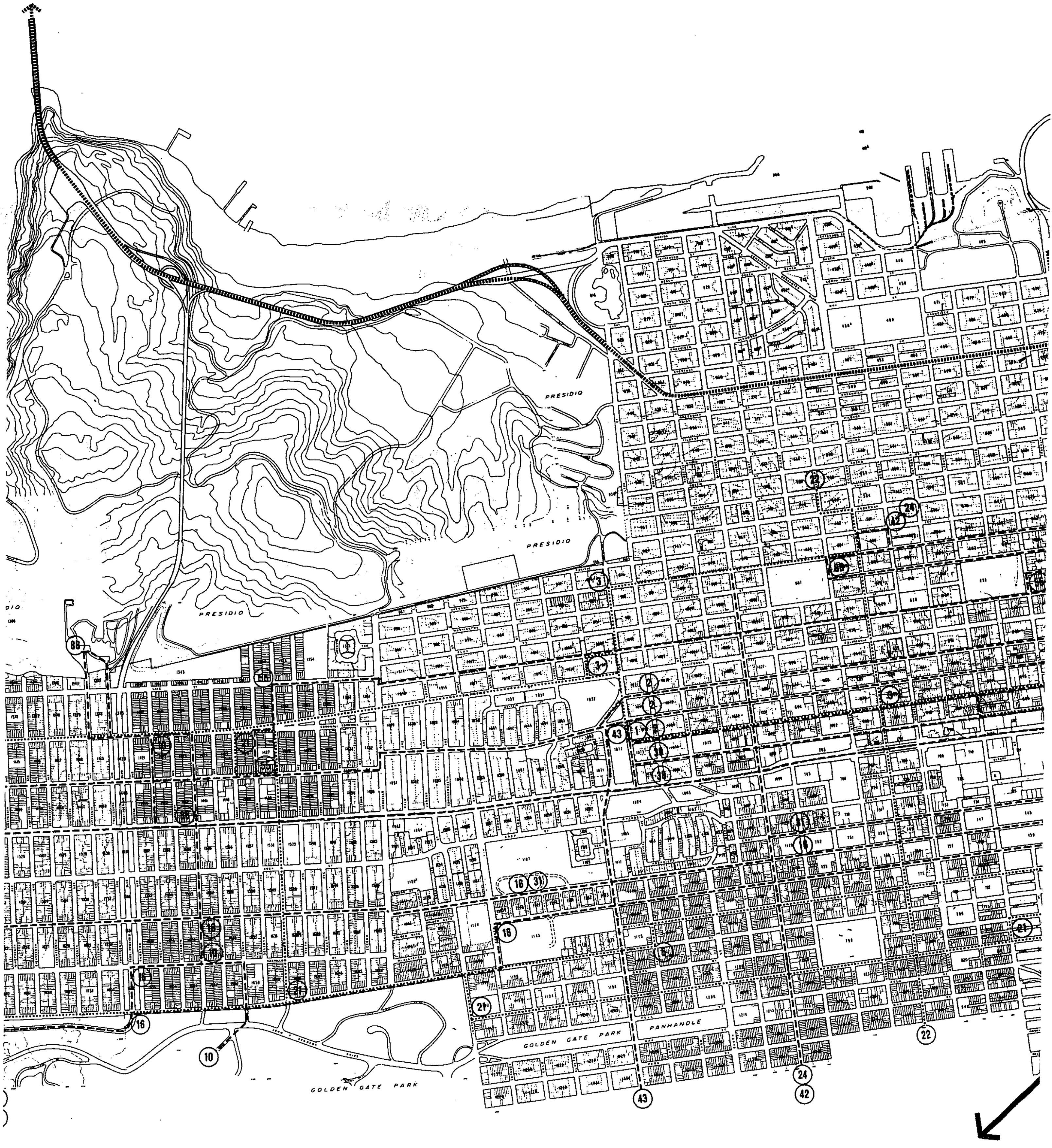
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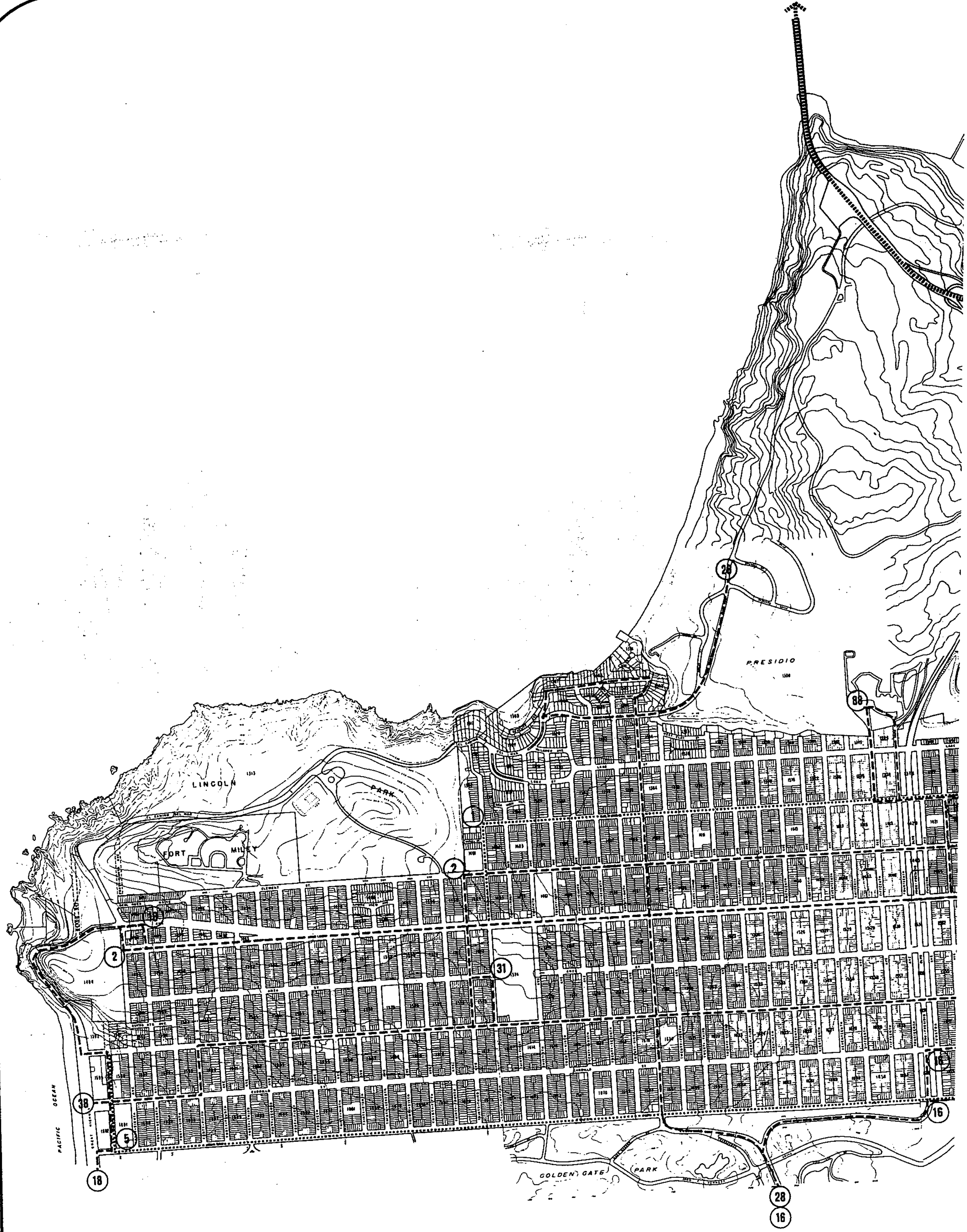
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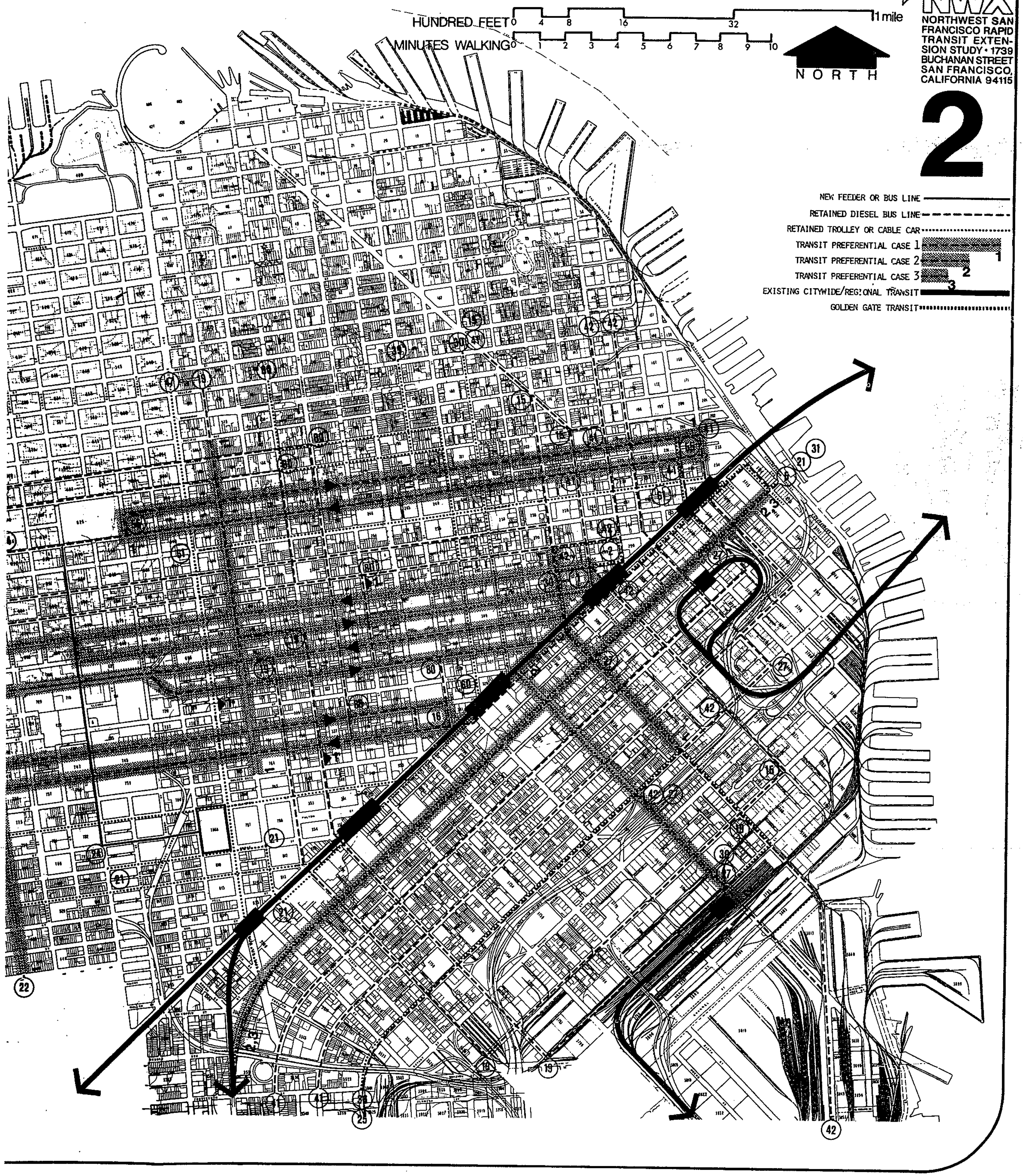

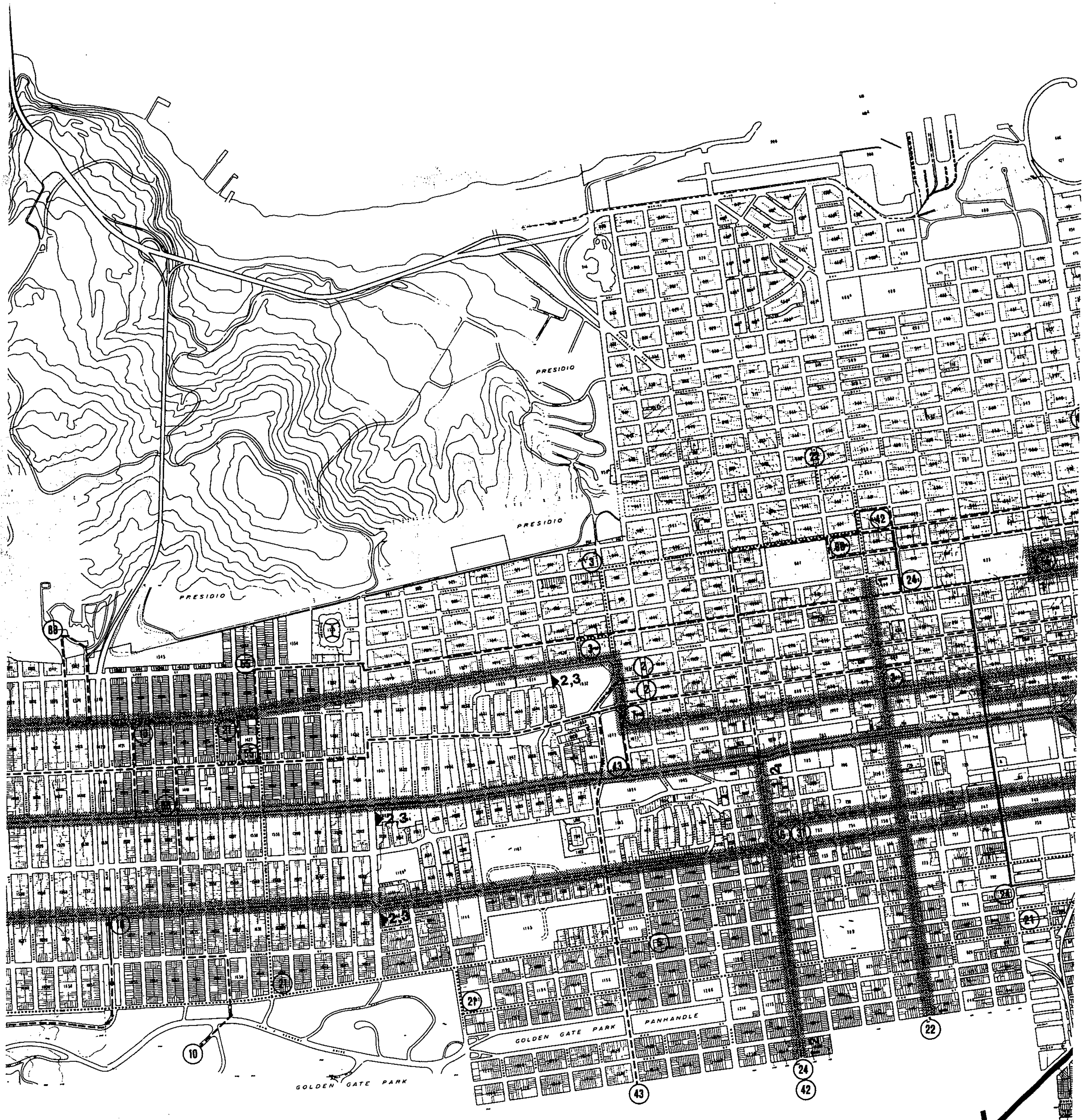
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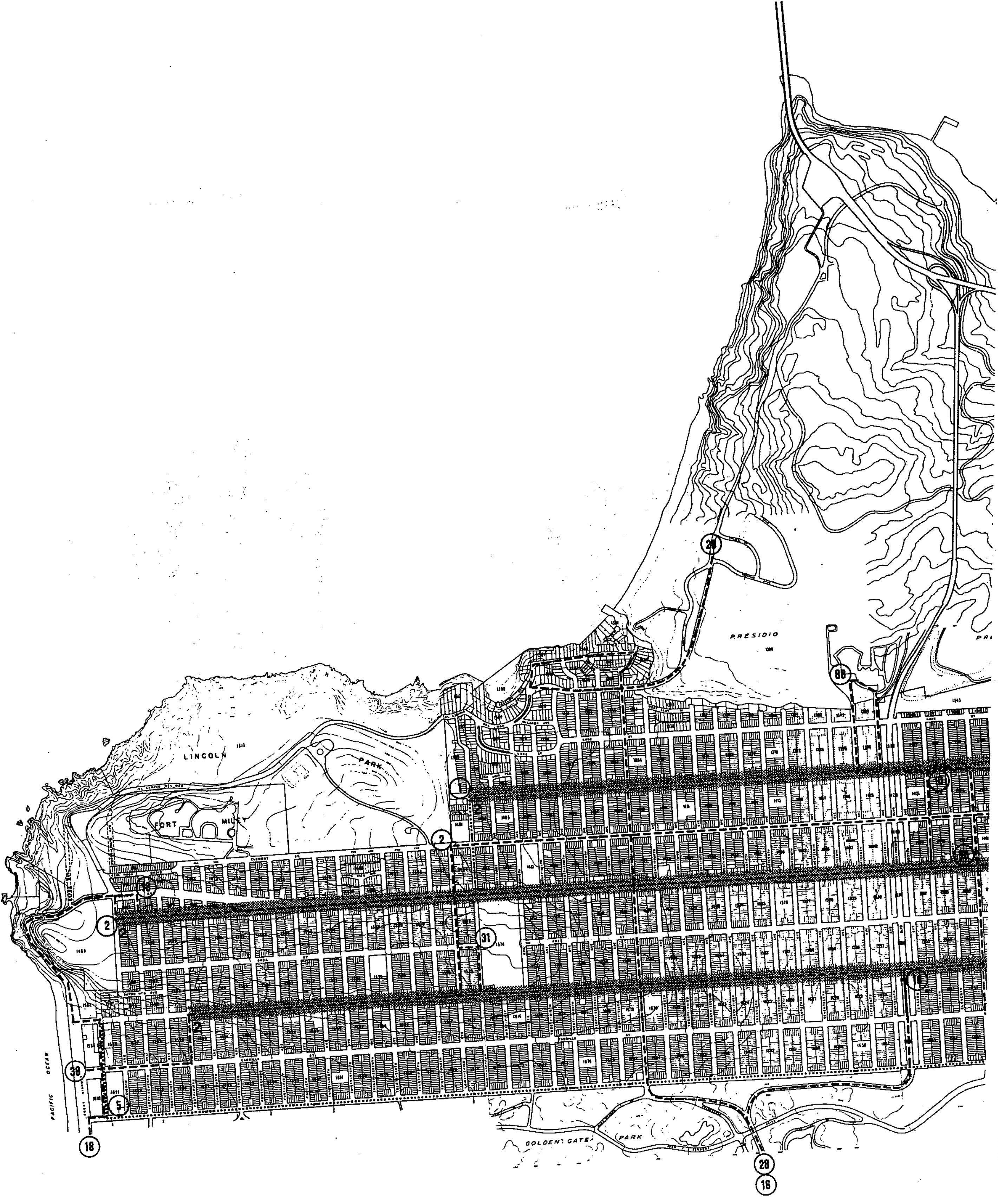
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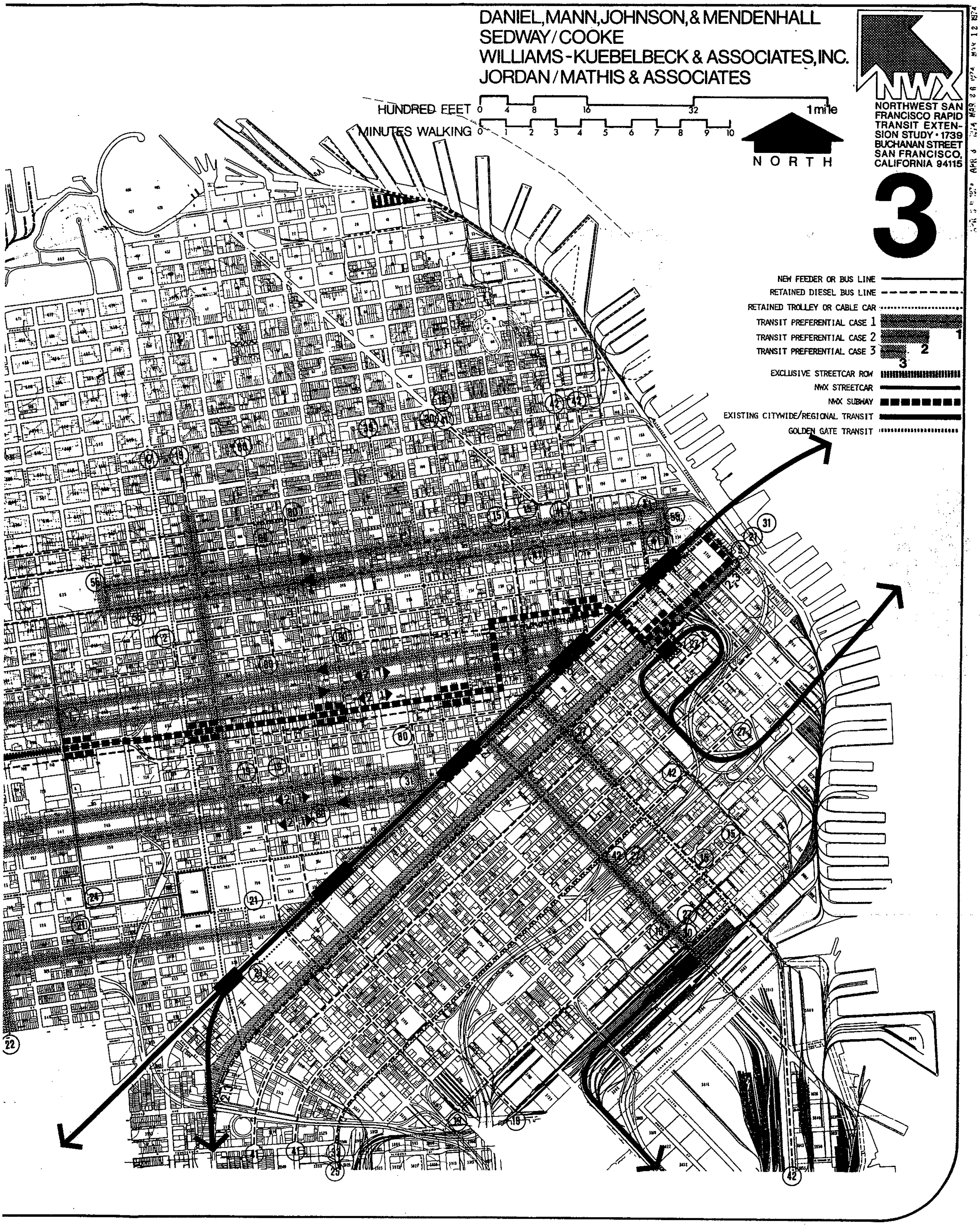DANIEL, MANN, JOHNSON, & MENDENHALL
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NEW FEEDER OR BUS LINE
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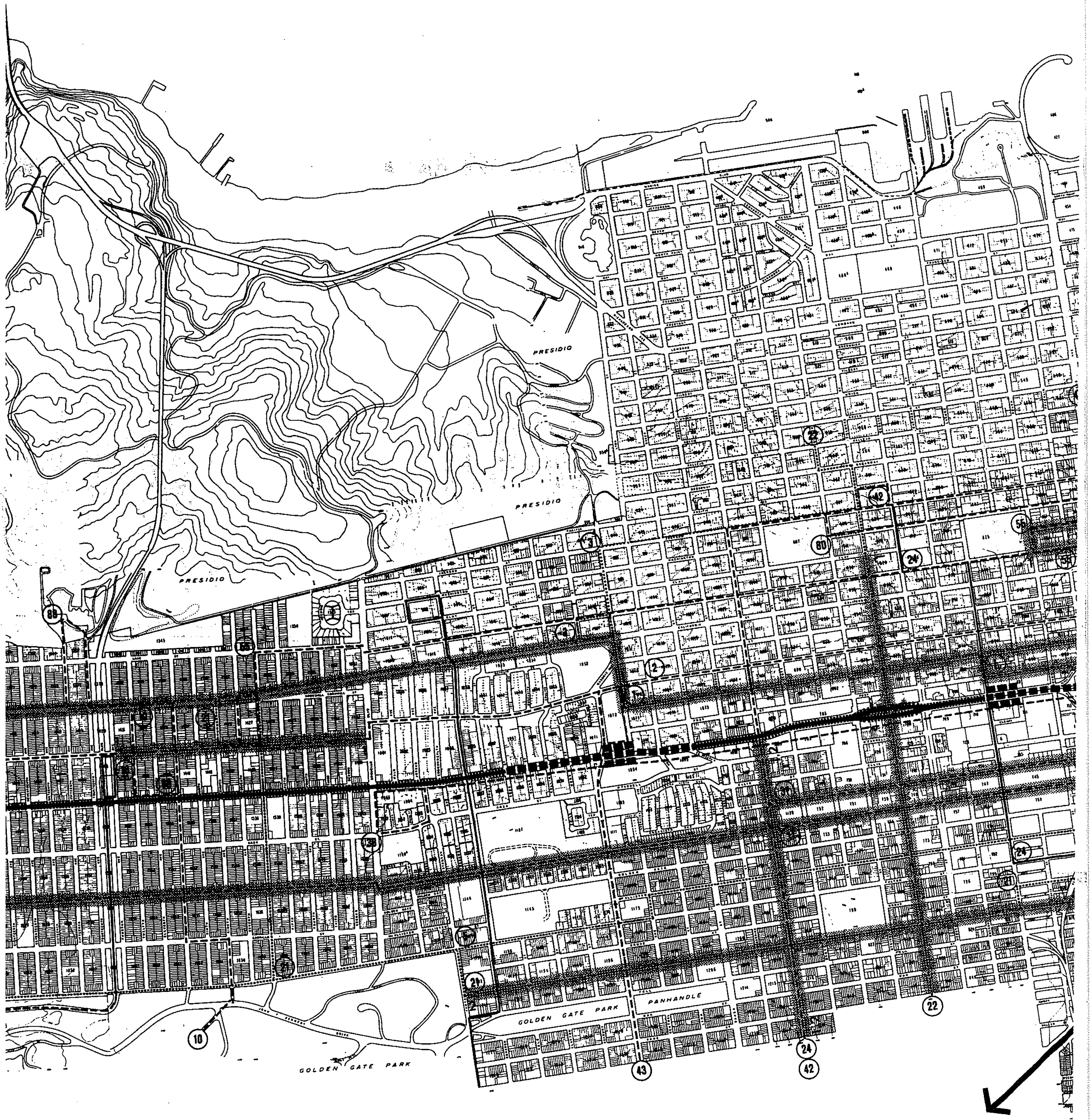
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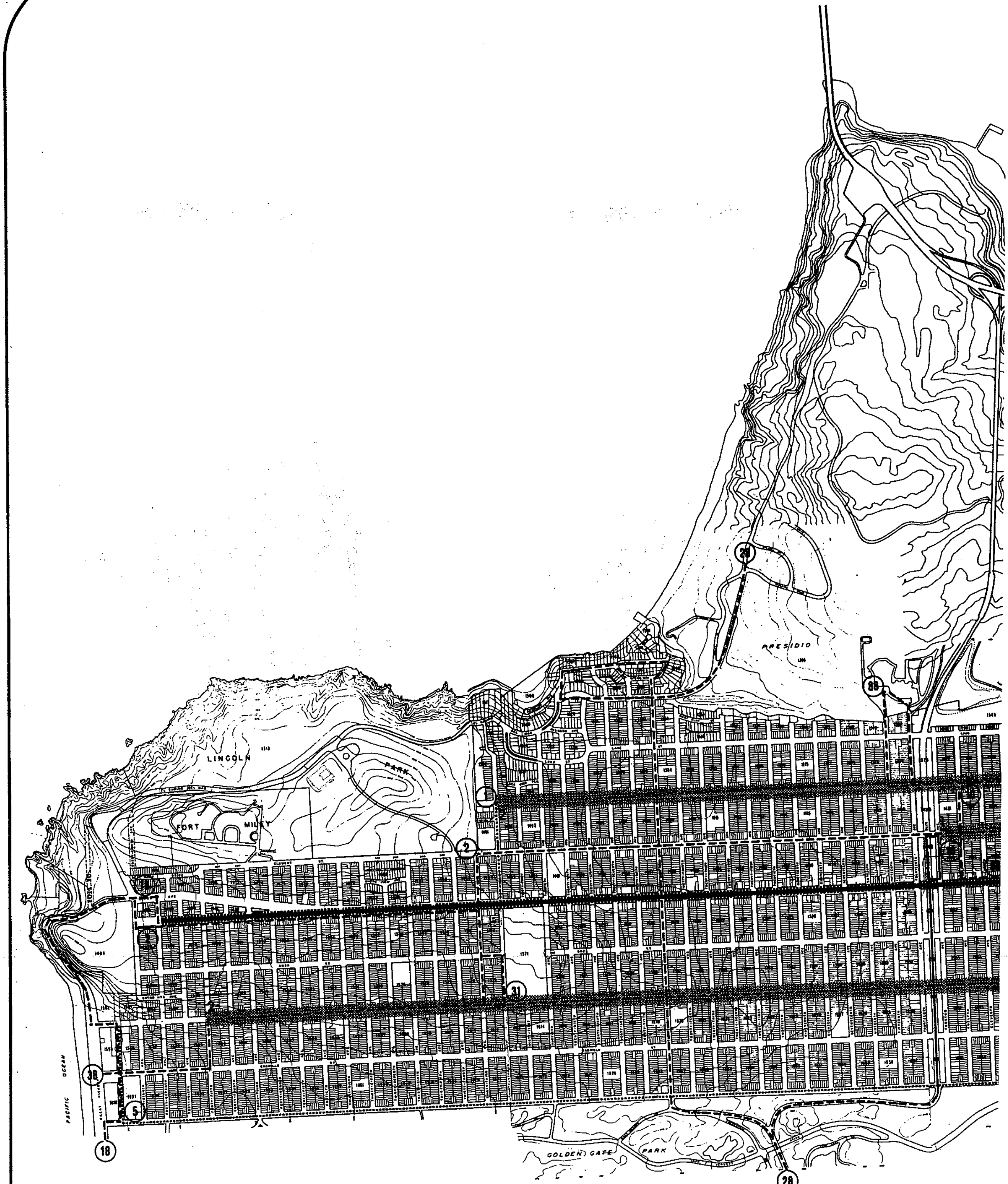
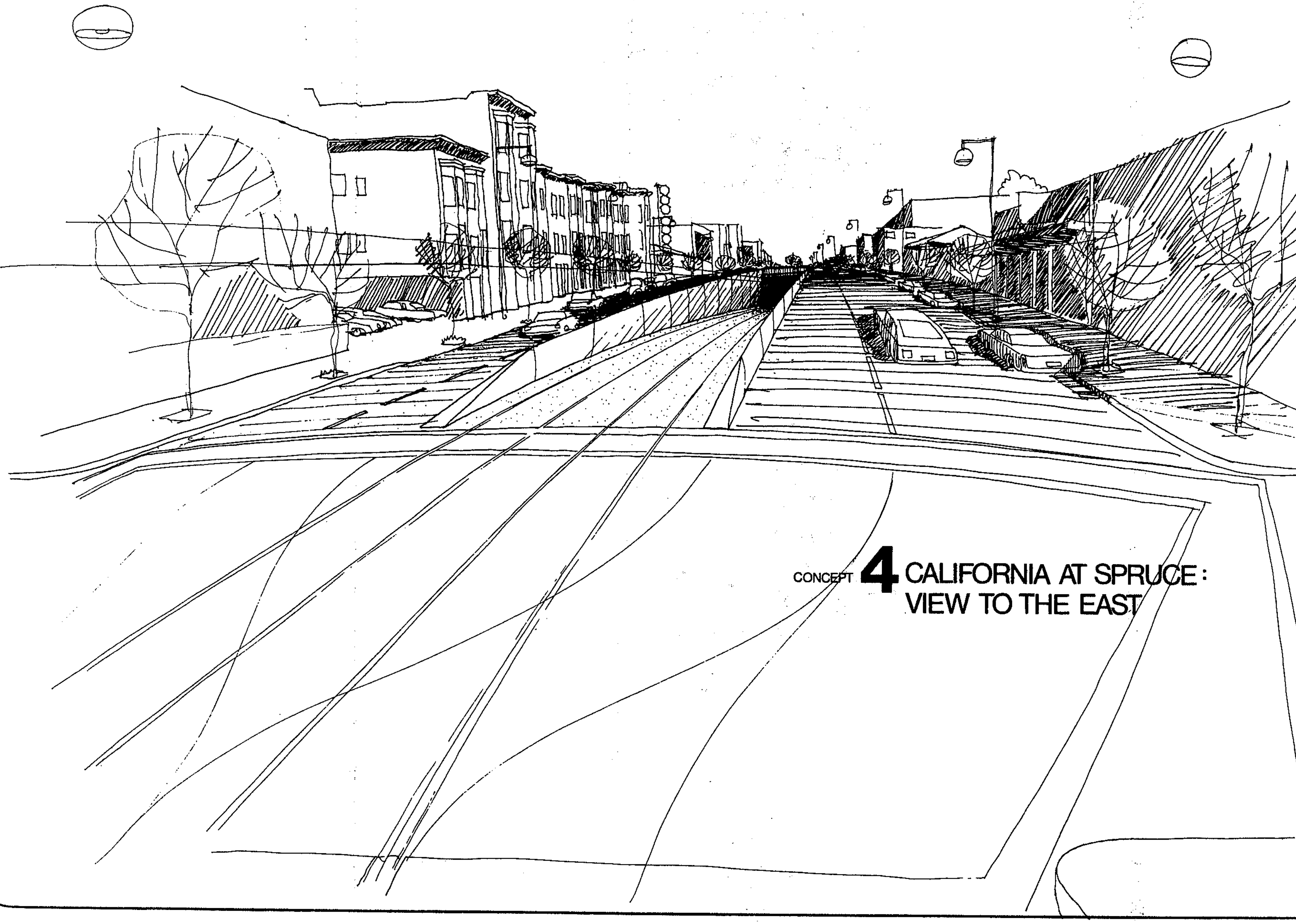


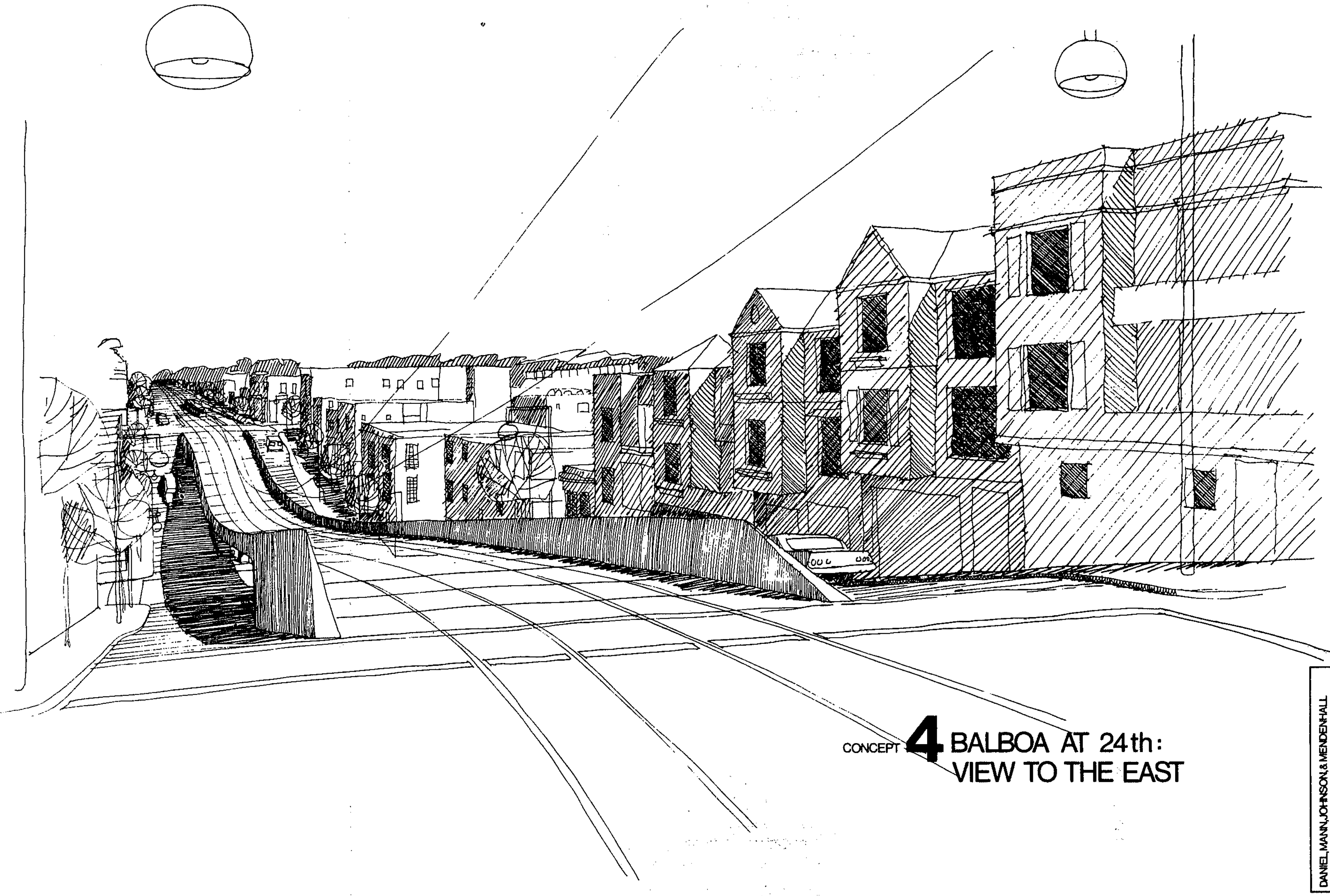
LINCOLN PARK
FORT MILEY
PRESIDIO
GOLDEN GATE PARK
PACIFIC OCEAN
29
88
2
31
38
5
18
28
16



CONCEPT 4 CALIFORNIA AT SPRUCE: VIEW TO THE EAST

DANIEL, MANN, JOHNSON, & MENDENHALL
SEDWAY/COOKE
WILLIAMS-KUEBELBECK & ASSOCIATES, INC.
JORDAN/MATHIS & ASSOCIATES

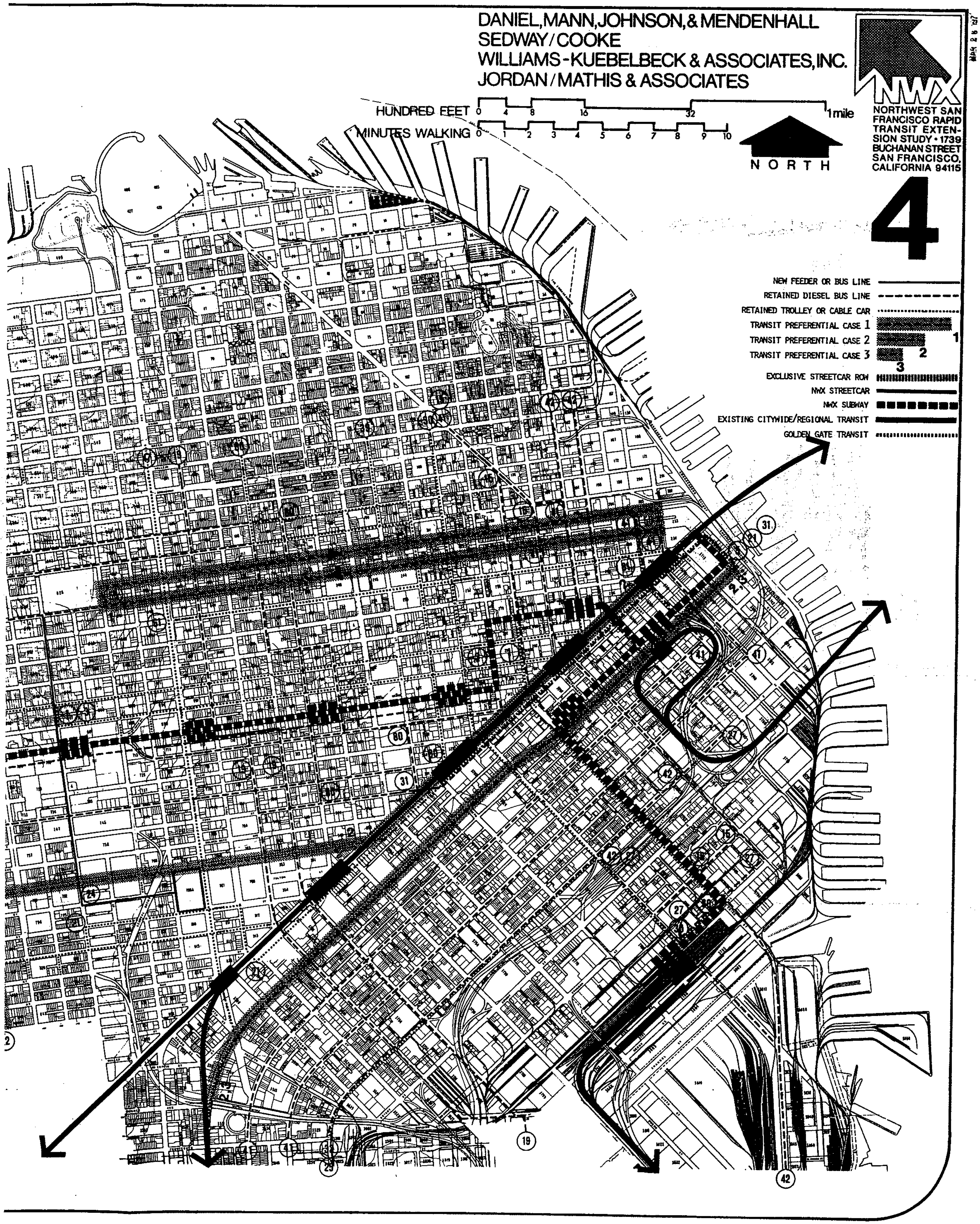
NWX
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY • 1739 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115

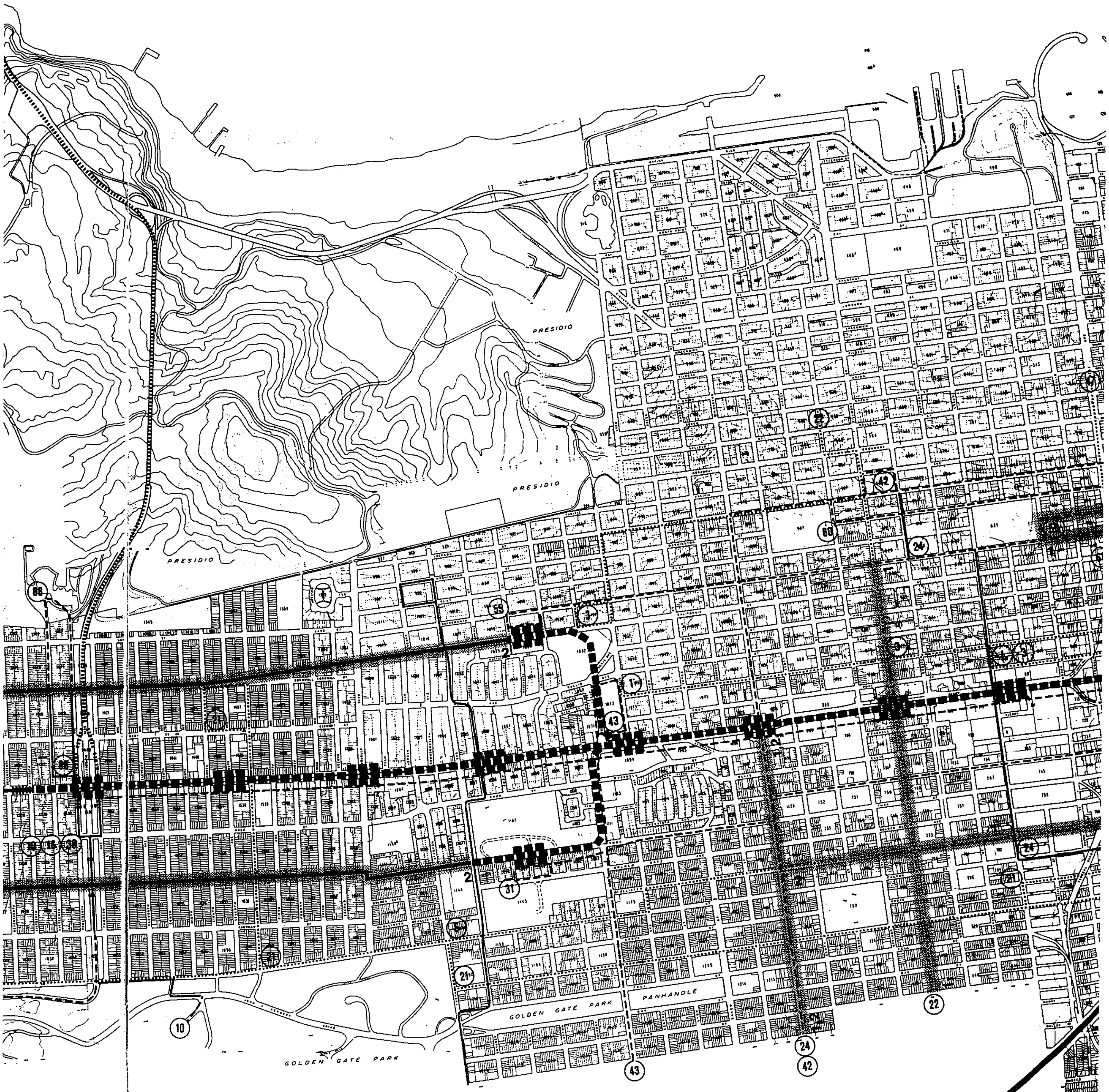


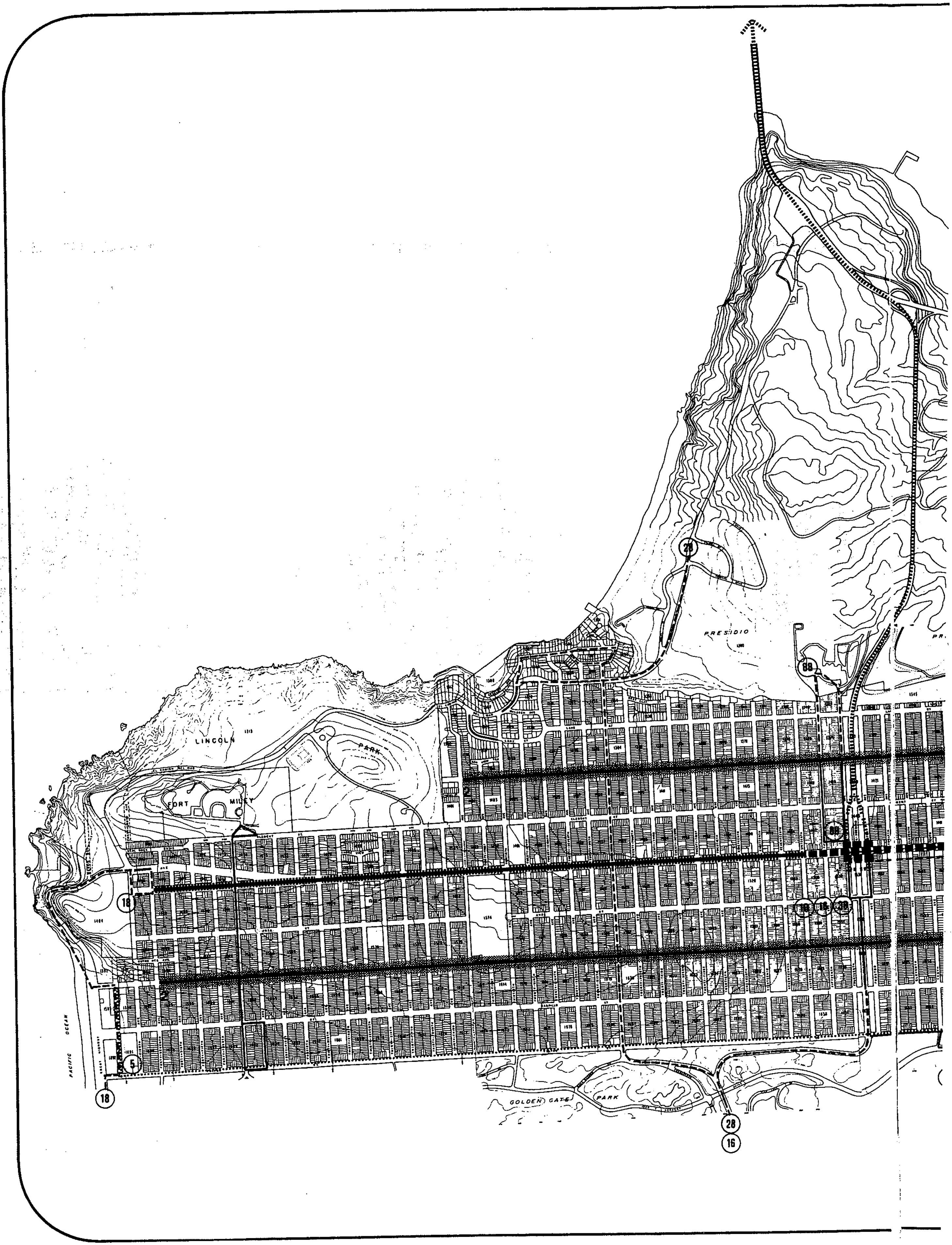
CONCEPT **4** BALBOA AT 24th:
VIEW TO THE EAST

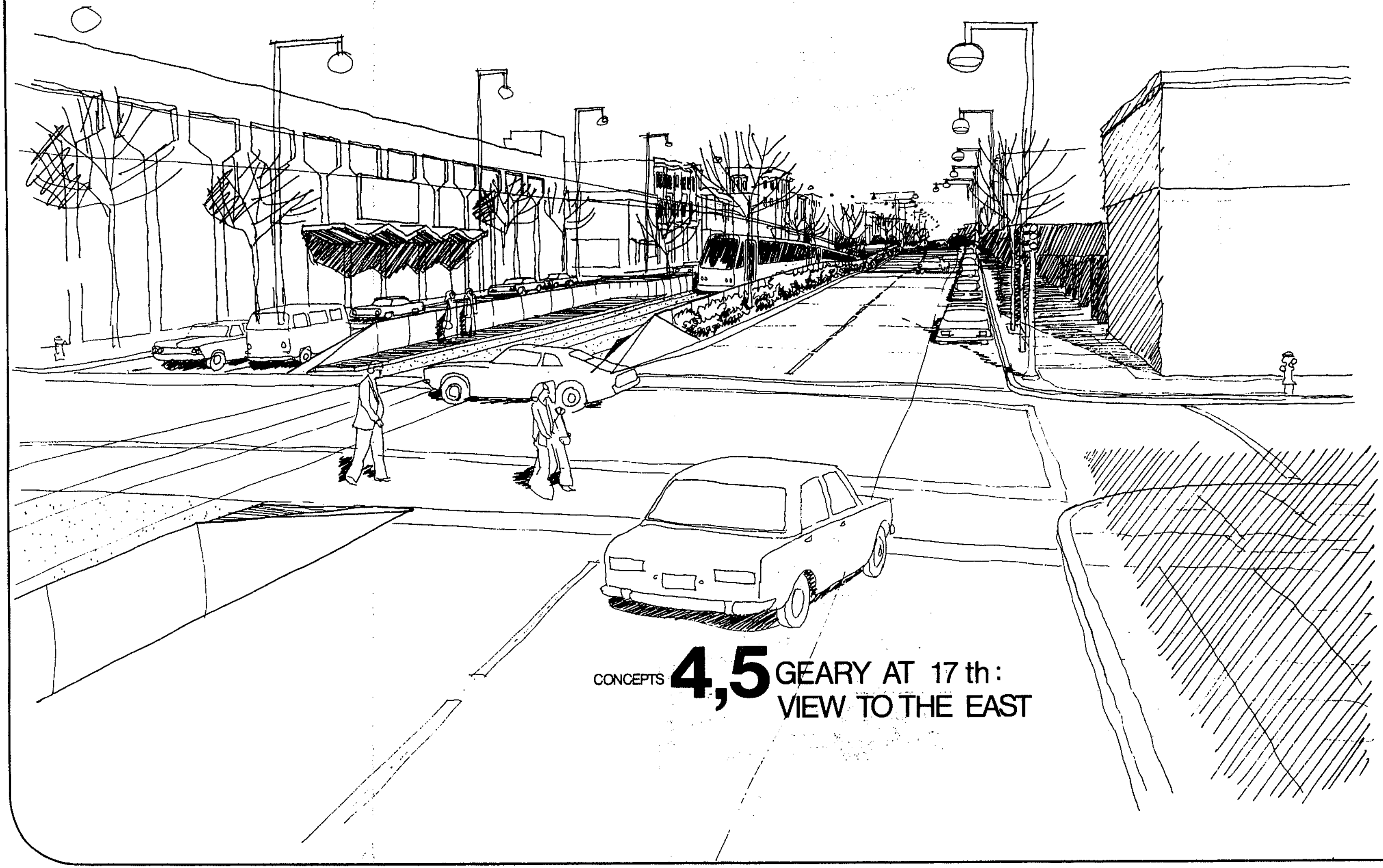
DANIEL, MANN, JOHNSON, & MENDENHALL
SEDWAY/COOKE
WILLIAMS-KUEBELBECK & ASSOCIATES, INC.
JORDAN/MATHIS & ASSOCIATES

NWX
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY · 1738 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115


DANIEL, MANN, JOHNSON, & MENDENHALL
SEDWAY / COOKE
WILLIAMS-KUEBELBECK & ASSOCIATES, INC.
JORDAN / MATHIS & ASSOCIATES
HUNDRED FEET 0 4 8 16 32 1 mile
MINUTES WALKING 0 1 2 3 4 5 6 7 8 9 10
NORTH
NWX
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY • 1739 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115
4
NEW FEEDER OR BUS LINE
RETAINED DIESEL BUS LINE
RETAINED TROLLEY OR CABLE CAR
TRANSIT PREFERENTIAL CASE 1
TRANSIT PREFERENTIAL CASE 2
TRANSIT PREFERENTIAL CASE 3
1
2
3
EXCLUSIVE STREETCAR ROW
NWX STREETCAR
NWX SUBWAY
EXISTING CITYWIDE/REGIONAL TRANSIT
GOLDEN GATE TRANSIT
31
21
41
27
42
15
80
24
19
29


PRESIDIO
PRESIDIO
PRESIDIO
GOLDEN GATE PARK
PANHANDLE
GOLDEN GATE PARK
88
88
18
18
38
10
55
2
2
31
43
1
43
21
21
80
42
24
24
22
22
24
42
12

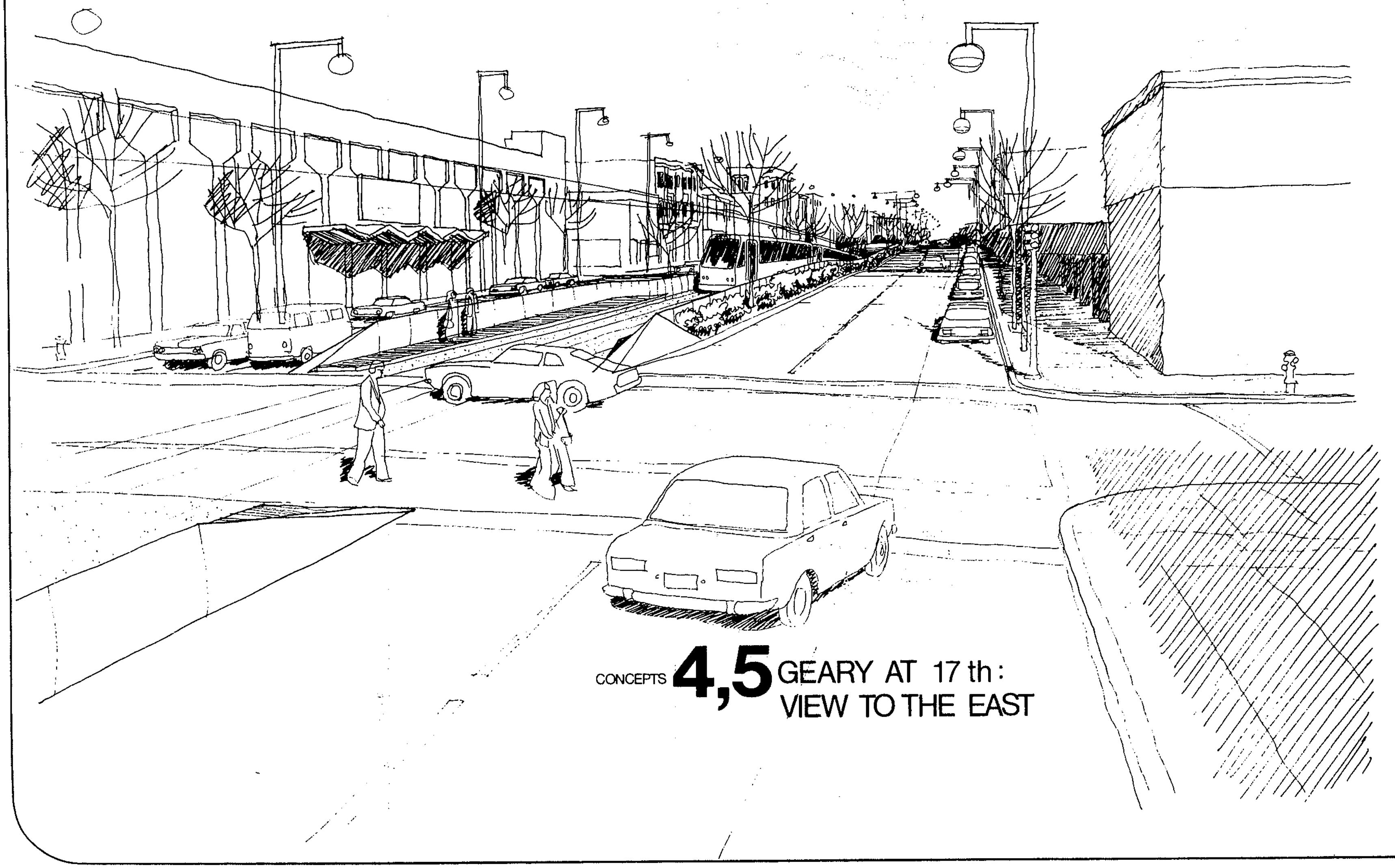

28
PRESIDIO
88
LINCOLN
PARK
FORT MILEY
18
88
PACIFIC OCEAN
5
18
GOLDEN GATE PARK
28
16



CONCEPTS **4,5** GEARY AT 17 th:
VIEW TO THE EAST

DANIEL,MANN,JOHNSON,& MENDENHALL
SEDWAY/COOKE
WILLIAMS-KUEBELBECK & ASSOCIATES,INC.
JORDAN/MATHIS & ASSOCIATES

NWX
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY · 1739 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115



CONCEPTS **4,5** GEARY AT 17 th:
VIEW TO THE EAST

DANIEL,MANN,JOHNSON,& MENDENHALL
SEDWAY/COOKE
WILLIAMS-KUEBELBECK & ASSOCIATES,INC.
JORDAN/MATHIS & ASSOCIATES

NWX
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY · 1739 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115

DANIEL, MANN, JOHNSON, & MENDENHALL
SEDWAY/COOKE
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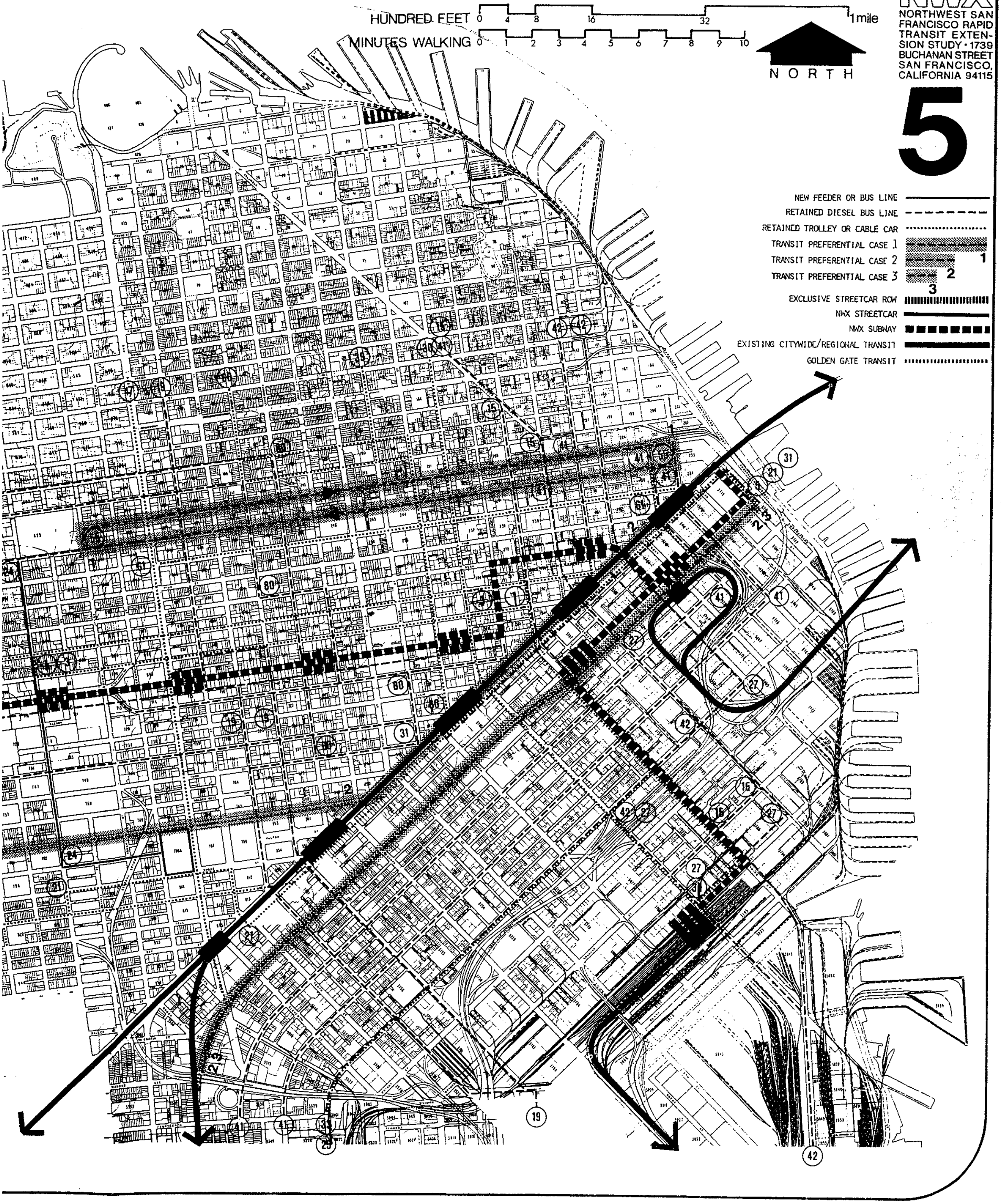
NORTHWEST SAN FRANCISCO RAPID TRANSIT EXTENSION STUDY · 1739 BUCHANAN STREET SAN FRANCISCO, CALIFORNIA 94115

5



HUNDRED FEET 0 4 8 16 32 1 mile
MINUTES WALKING 0 1 2 3 4 5 6 7 8 9 10
NORTH
NEW FEEDER OR BUS LINE
RETAINED DIESEL BUS LINE
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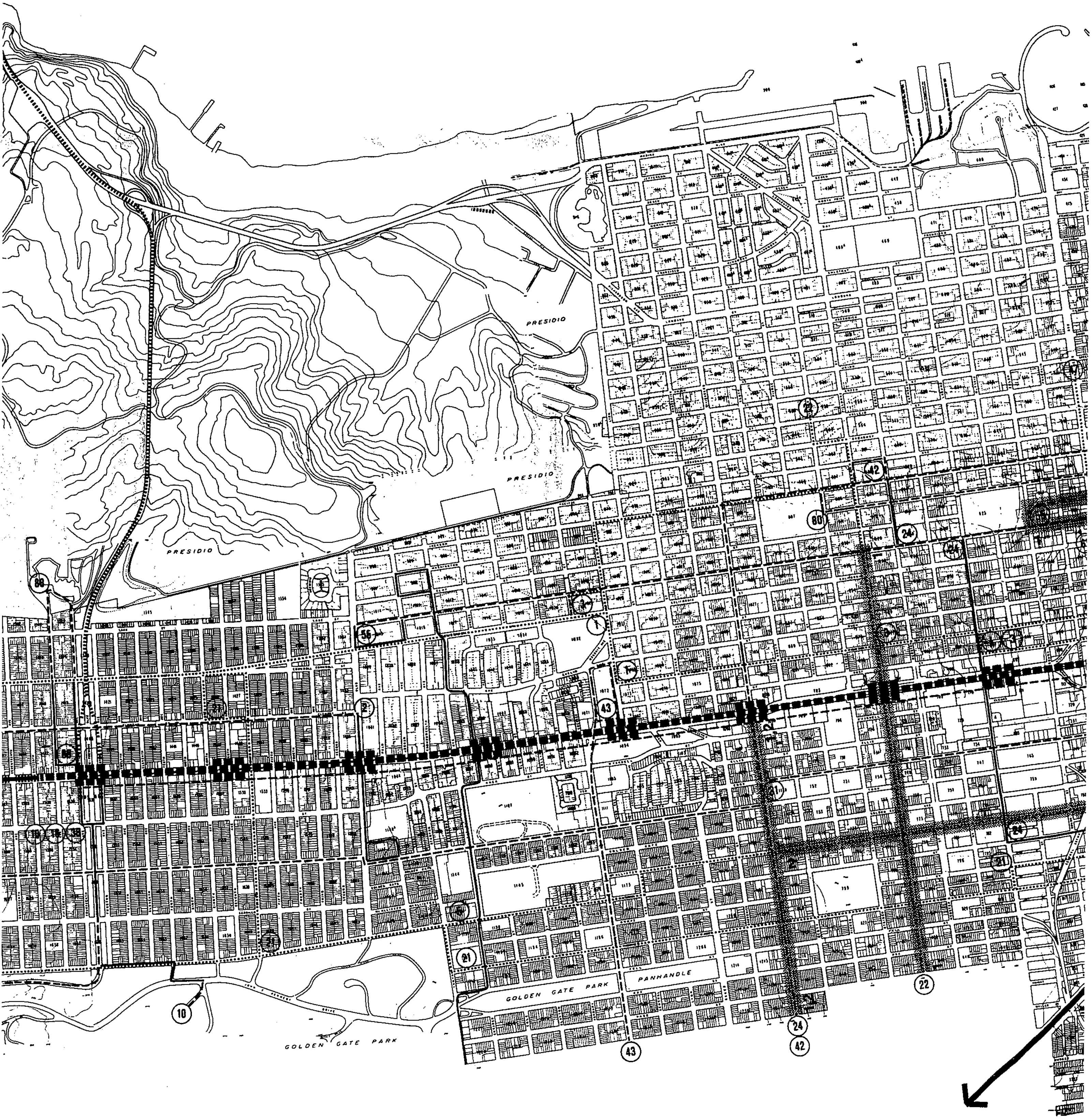
PRESIDIO
PRESIDIO
PRESIDIO
GOLDEN GATE PARK
GOLDEN GATE PARK
PANHANDLE
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80
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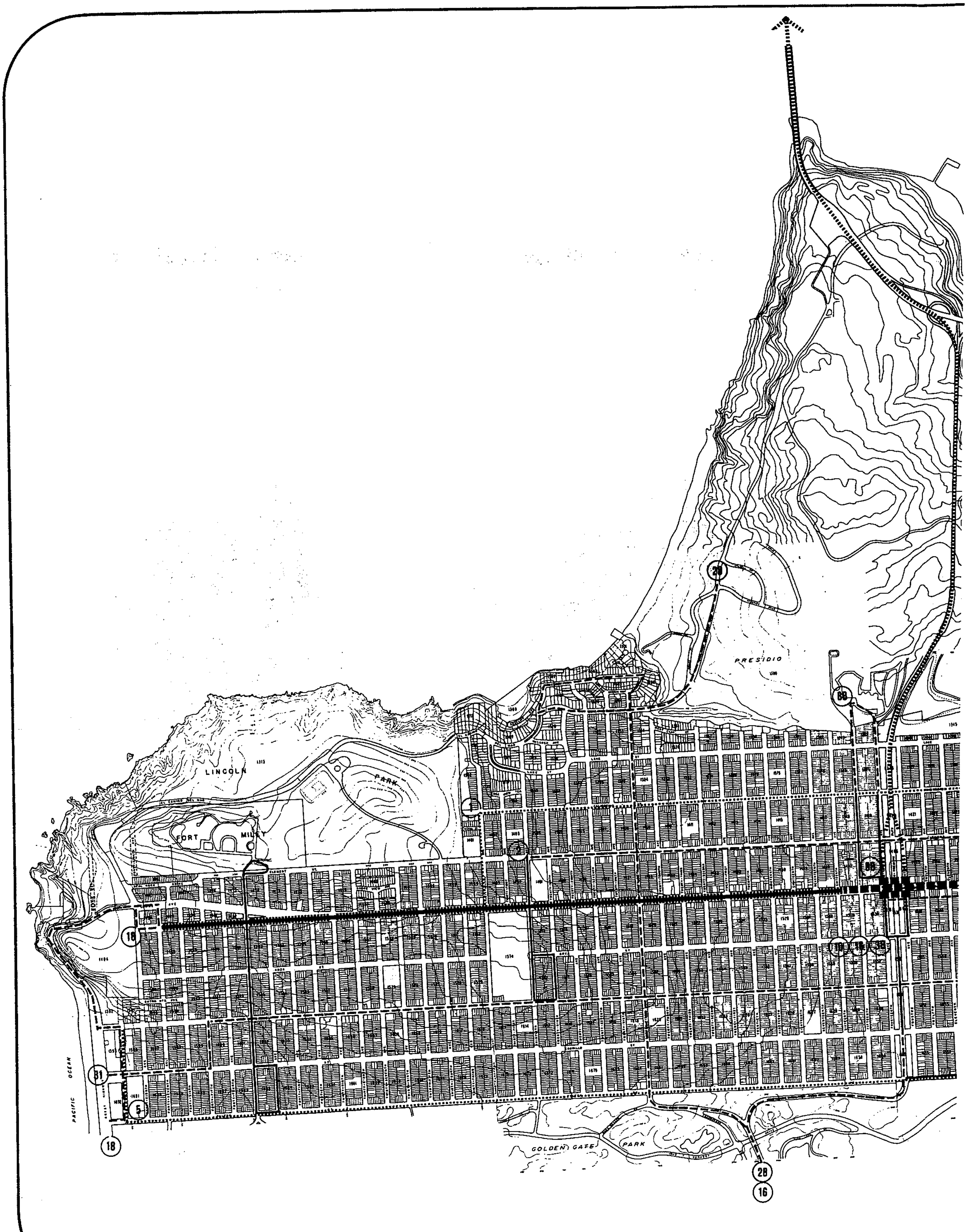
PRESIDIO
29
88
LINCOLN PARK
FORT MILEY
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PACIFIC OCEAN
GOLDEN GATE PARK
28
16